

AMENDMENT

Please cancel Claims 1-42, and amend Claims 43-60 to read as follows.

1.-42. (Cancelled)

43. (Currently Amended) A method for identifying a compound to be tested for an ability to decrease ~~modulate~~ bone mass in a mammal via activation of a receptor, comprising:

- a)- contacting a test compound with a polypeptide; and
- b)- determining whether the test compound binds the polypeptide, so that if the test compound binds the polypeptide, then a compound to be tested for an ability to decrease ~~modulate~~ bone mass is identified,

wherein the receptor is a leptin receptor and the polypeptide is selected from the group consisting of a leptin polypeptide and or a leptin receptor polypeptide.

44. The method of claim 43, wherein said polypeptide is a human polypeptide

45. (Cancelled)

46. (Cancelled)

47. (Currently Amended) A method for identifying a compound that modulates bone mass in a mammal, comprising:

- a)- contacting test compounds with a polypeptide;
- b)- identifying a test compound that binds the polypeptide; and
- c)- administering the test compound in (b) to a non-human mammal, and determining whether the test compound modulates bone mass in the mammal relative to that of a corresponding bone in an untreated control non-human mammal,

wherein the polypeptide is selected from the group consisting of a leptin polypeptide and a leptin receptor polypeptide, so that if the test compound modulates bone mass, then a compound that modulates bone mass in a mammal is identified, and wherein binding of the leptin polypeptide to the leptin receptor polypeptide activates the leptin receptor polypeptide and activation of the leptin receptor polypeptide decreases bone mass.

48. (Original) The method of claim 47, wherein said polypeptide is a human polypeptide.

49. (Original) The method of claim 47, wherein said ability to modulate bone mass is the ability to increase bone mass.
50. (Original) The method of claim 47, wherein said ability to modulate bone mass is the ability to decrease bone mass.
51. (Currently Amended) A method for identifying a compound to be tested for an ability to modulate bone mass in a mammal, comprising:
- a)- contacting a test compound with a leptin polypeptide and a leptin receptor polypeptide for a time sufficient to form leptin/leptin receptor complexes; and
 - b)- measuring leptin/leptin receptor complex level, wherein formation of the leptin/leptin receptor complex decreases bone mass,
- so that if the level measured differs from that measured in the absence of the test compound, then a compound to be tested for an ability to modulate bone mass is identified.
52. (Original) The method of claim 51, wherein said leptin polypeptide is a human polypeptide.
53. (Original) The method of claim 51, wherein said leptin receptor polypeptide is a human polypeptide.
54. (Original) The method of claim 51, wherein said ability to modulate bone mass is the ability to increase bone mass.
55. (Original) The method of claim 51, wherein said ability to modulate bone mass is the ability to decrease bone mass.
56. (Original) A method for identifying a compound to be tested for an ability to decrease bone mass in a mammal, comprising:
- a)- contacting a test compound with a cell which expresses a functional leptin receptor; and
 - b)- determining whether the test compound activates the leptin receptor,
- wherein if the compound activates the leptin receptor a compound to be tested for an ability to decrease bone mass in a mammal is identified.

57. (Original) A method for identifying a compound that decreases bone mass in a mammal, comprising:
- a)- contacting a test compound with a cell that expresses a functional leptin receptor, and determining whether the test compound activates the leptin receptor;
 - b)- administering a test compound identified in (a) as activating the leptin receptor to a non-human animal, and determining whether the test compound decreases bone mass of the animal relative to that of a corresponding bone of a control non-human animal,
- so that if the test compound decreases bone mass, then a compound that decreases bone mass in a mammal is identified.
58. (Currently Amended) A method for identifying a compound to be tested for an ability to increase bone mass in a mammal, comprising:
- a)- contacting a leptin polypeptide and a test compound with a cell that expresses a functional leptin receptor; and
 - b)- determining whether the test compound lowers activation of the leptin receptor relative to that observed in the absence of the test compound;
- wherein a test ~~compounds~~ compound that lowers activation of the leptin receptor is identified as a compound to be tested for an ability to increase bone mass in a mammal.
59. (Original) A method for identifying a compound that increases bone mass in a mammal, comprising:
- a)- contacting a leptin polypeptide and a test compound with a cell that expresses a functional leptin receptor, and determining whether the test compound decreases activation of the leptin receptor;
 - b)- administering a test compound identified in (a) as decreasing leptin receptor to a non-human animal, and determining whether the test compound increases bone mass of the animal relative to that of a corresponding bone of a control non-human animal,

so that if the test compound increases bone mass, then a compound that increases bone mass in a mammal is identified.

60. (Original) The method of claim 56, 57, 58 or 59 in which activation of the leptin receptor is determined by measuring levels of phosphorylated Stat3 polypeptide.
61. (New) A method for identifying a compound to be tested for an ability to increase bone mass in a mammal by preventing activation of a receptor, comprising:
- a)- contacting a test compound with a polypeptide; and
 - b)- determining whether the test compound binds the polypeptide, so that if the test compound binds the polypeptide, then a compound to be tested for an ability to decrease bone mass is identified,

wherein the receptor is a leptin receptor and the polypeptide is a leptin polypeptide or a leptin receptor polypeptide.

62. (New) The method of claim 61, wherein said polypeptide is a human polypeptide